

MARES SERVICE MANUAL

2010

mares[®]

The Mares logo features the word "mares" in a bold, lowercase, sans-serif font. Below the letter "a" is a red downward-pointing chevron shape.

R2S
1ST STAGE

mares[®]

MAINTENANCE PROCEDURE

► TOOLS NEEDED



WARNING !

ALL MAINTENANCE AND REPAIR PROCEDURES MUST BE PERFORMED BY A MARES AUTHORIZED SERVICE CENTER AND/OR DISTRIBUTOR. THEREFORE, THE INFORMATION PROVIDED BELOW IS INTENDED STRICTLY FOR TECHNICIANS AT SUCH CENTERS.



ALL OPERATIONS MUST BE CONDUCTED STRICTLY IN THE ORDER DESCRIBED.

IN ORDER TO ENSURE ADVANCED PERFORMANCE AND SAFETY DURING USE, AFTER 100 HOURS OF DIVING OR 1 YEAR WE RECOMMEND THAT THE REGULATOR BE CHECKED, AND ITS CRITICAL PARTS MUST BE INSPECTED AND REPLACED IF NECESSARY.

- Compressed air supply circuit or tank (180-200 bar)
- Nylon brush
- O-Ring removal tool
- Silicone grease (General Electric Versalube G-322 type)
- Compressed air gun (8-10 Bar)
- Descaling solution (Deox Extra type) or ultrasound tank
- Test Bench or LP pressure gauge to calibrate the intermediate pressure
- Thread compound (Loctite 422 type for INT connection - Loctite 415 type for DIN connection)
- R2S 1st st. service kit (code 46201130)



(B-23)
46106223



(B-5)
46106205



(B-18) 14 mm
46106218



(B-1) 25 mm
46106201



(B-4) 5 mm
46106204



Hex wrench 4 mm



(B-41)
41106000



(B-12) 5.5mm
46106212



(B-22)
46106222

DISASSEMBLY INT VERSION

1. Loosen the dust cap (REF. 10) from the 1st stage, fully unscrewing the yoke knob (16) (Fig. 1).
2. Unscrew the hose protection from the body of the 1st stage. (Fig. 2).



FIG. 1



FIG. 2

**WARNING!**

DO NOT USE BLADES OR POINTED TOOLS MADE OF STEEL OR OTHER MATERIALS, WHICH CAN SCRATCH THE SURFACES.

3. Unscrew the hose (26) using a 14-mm open end wrench (B-18) (Fig. 3).
4. Use the B-41 tool to remove the R2S Cap (Fig. 4).



FIG. 3



FIG. 4



FIG. 4



5. Screw the tool (B-5) to help disassemble the first stage into a 3/8 low pressure port (Fig. 5).
6. Using the Pin Wrench (B-13), unscrew the cap (19), and pull out the complete piston (18) and the spring (4) (Fig. 6).
7. Using the extraction tool (B-22), pull out the Piston Seat (Fig. 7).



FIG. 5



FIG. 6

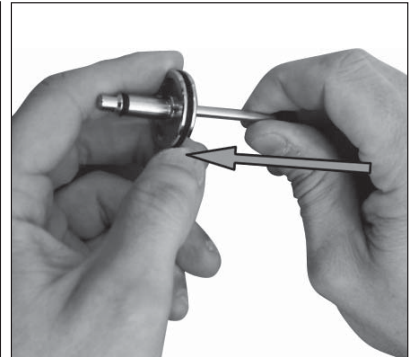


FIG. 7



8. Using the special 25-mm wrench (B-1), unscrew the Yoke retainer nut. (Fig. 8)

NOTE TO MAKE DISASSEMBLY EASIER, WE RECOMMEND THAT YOU PLACE THE FIRST STAGE IN A BENCH VISE.

9. Using the snap ring pliers (B-14), remove the Yoke retainer nut (23), the Snap ring (2), the Sintered filter (8), and the Filter spring (12) (Fig. 9).

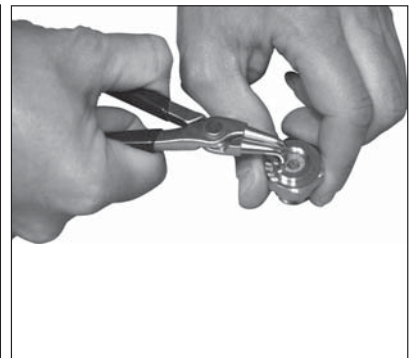
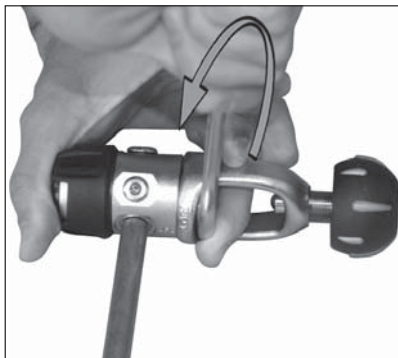


FIG. 8

FIG. 9



DISASSEMBLY DIN VERSION

1. Unscrew the DIN OR seat (15) from the DIN fitting (24) with a 4-mm Allen wrench (Fig. 1).
2. Remove the O-Ring (25) from the OR seat (15).
3. Remove the sintered filter (7) from the DIN connector body (24), turning the first stage over.

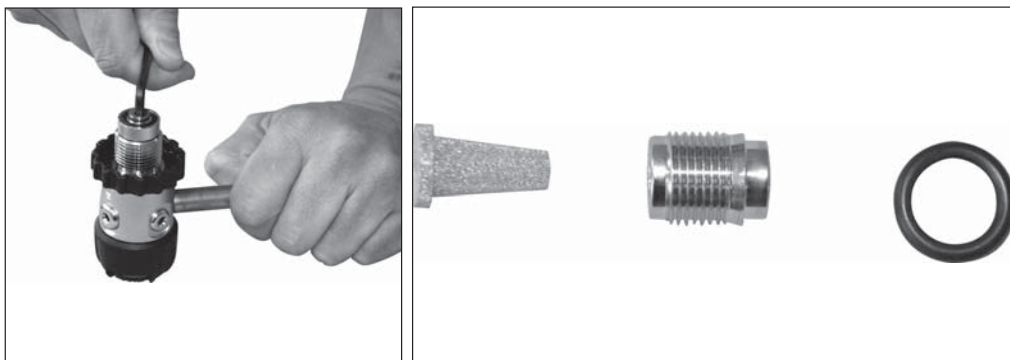


FIG. 1

NOTE DO NOT USE BLADES OR POINTED TOOLS MADE OF STEEL OR OTHER MATERIALS, WHICH CAN SCRATCH THE SURFACES.

NOTE TO MAKE DISASSEMBLY EASIER, MARES RECOMMENDS PLACING THE 5-mm ALLEN WRENCH (B-4) IN A BENCH VISE AS SHOWN IN THE PHOTO. (FIG. 3)

4. Insert an 5-mm Allen wrench (B-4) inside the DIN fitting (24) and unscrew it completely (Fig. 2).
5. Remove the DIN fitting (24) and the DIN ring nut (11).
6. Remove the O-Ring (26) from the DIN fitting body (24).

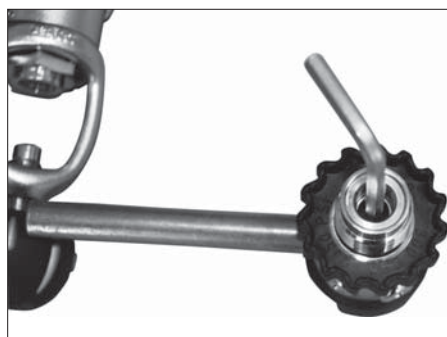


FIG. 2

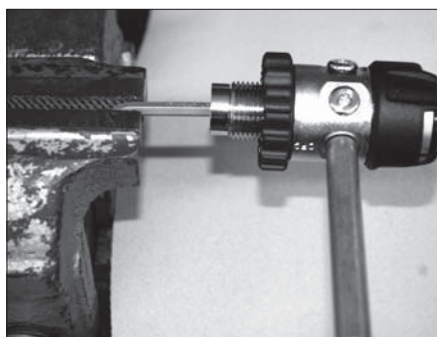


FIG. 3



CLEANING AND CHECKS

For routine cleaning of reusable rubber components, wash all parts in a mixture of hot water and mild detergent, scrubbing if necessary with a soft brush. Do not use solvents or acids on rubber components.

NOTE ACIDS OR OTHER SOLVENTS MAY DAMAGE PLASTIC AND RUBBER PARTS. BEFORE CLEANING METAL COMPONENTS, MAKE SURE THAT ALL SEALS AND OTHER PARTS SUBJECT TO DETERIORATION HAVE BEEN REMOVED.

DO NOT IMMERSE THE PISTON SEAT AND THE SINTERED FILTER IN AN ACID SOLUTION.

Chrome-plated brass and stainless steel components can be cleaned using a nylon brush to remove any deposits, by immersing them in a fresh water ultrasound bath, or, if suitable equipment is not available, in a gentle acid solution (Deox Extra type) or white vinegar diluted with hot water.

Be sure to rinse all parts in fresh water and dry with a jet of low pressure air at 8-10 bar before proceeding with reassembly.



WARNING!

CERTAIN KEY COMPONENTS OF THE FIRST STAGE SHOULD BE REGULARLY REPLACED AT EACH SCHEDULED OVERHAUL. LISTED BELOW ARE THE COMPONENTS INCLUDED IN THE R2S 1ST STAGE SERVICE KIT (CODE 46201108)

- R2S SERVICE KIT (INT/DIN: 46201108)
 - VITON R2S SERVICE KIT (INT/DIN: 46201130)
- I. SNAP RING (INT CONNECTIONS ONLY)
 - II. INT TAPERED SINTERED FILTER
 - III. DIN TAPERED SINTERED FILTER
 - IV. PISTON SEAT
 - V. **3 106 O-RINGS (LP Cap)**
 - VI. **2 108 O-RINGS (HP Cap)**
 - VII. **1 2018 O-RING (Piston Stem)**
 - VIII. **1 3043 O-RING (O-Ring Housing)**
 - IX. **1 2100 O-RINGS (Piston Head)**
 - X. **1 2050 O-Ring (din fitting - Yoke retainer nut)**

CLEANING AND CHECKS

| | |
|--|--|
| SNAP RINGS | Check for distortion, cracking or damaged edges. It is advisable to always replace them with new ones. |
| PISTON | Check for scratches and/or grooves in the O-Ring sealing seats. Make sure that the hole through the stem is not obstructed by foreign bodies. |
| SINTERED FILTER | Inspect for sedimentation and rust. Rust deposits may indicate corrosion of the air tanks. Inspect for any cracks. |
| PISTON SEAT | Check that the sealing surfaces are not chipped or scratched and that there are no foreign particles. These types of defects can compromise operations. |
| <p>NOTE THE PISTON SEAT MUST NOT BE FLIPPED OVER.</p> | |
| O-RING | Check for cuts, deformation, or foreign particles. Any of these defects can cause leaks. |
| CAP | Check that there are no grooves or scratches on the sealing surface of the piston O-Rings. |
| FIRST STAGE BODY | Check that there are no grooves or scratches on the sealing surface of the piston (shaft), in the port plug seats, or on the sealing surface on the piston seat. Make sure there are no particles or foreign bodies inside the first stage. |

REASSEMBLY



WARNING!

IF THE 1ST STAGE IS USED FOR DIVES WITH OXYGEN-ENRICHED MIXTURES, STRICTLY FOLLOW ALL THE INSTRUCTIONS PROVIDED IN THIS MAINTENANCE MANUAL IN THE NITROX CHAPTER (EN 13949) BEFORE BEGINNING REASSEMBLY!



BEFORE REASSEMBLING, LIGHTLY LUBRICATE ALL THE O-RINGS WITH SILICONE GREASE (TYPE GENERAL ELECTRIC VERSALUBE G-322). LUBRICATION REDUCES THE LIKELIHOOD OF DAMAGE DURING REASSEMBLY.

1. Place the yoke retainer nut (23), the filter spring (12), and the INT tapered sintered filter (8) in the body (Fig. 1 and Fig. 2).
2. Using the snap ring pliers (B-14), fit the snap ring (2) in its position above the sintered filter (8) (Fig. 3).



FIG. 1



FIG. 2



FIG. 3



FIG. 4



ROTATE THE SNAP RING TO CHECK THAT IT IS POSITIONED CORRECTLY AS SHOWN IN THE PHOTO (FIG. 4).



TO PREVENT THE YOKE RETAINER NUT FROM WORKING LOOSE ACCIDENTALLY, POUR ONE OR TWO DROPS OF THREAD COMPOUND (LOCTITE 422 TYPE) ONTO ITS THREADING AS SHOWN IN THE PHOTO (FIG. 5).

3. Position the yoke (21) with the knob (16) on the first stage body.
4. Position the O-Ring 2050 (26) on the Yoke retainer nut (23).
5. Using the wrench (B-1), fully tighten the complete yoke retainer nut (7). (Fig. 6)



FIG. 5



FIG. 6

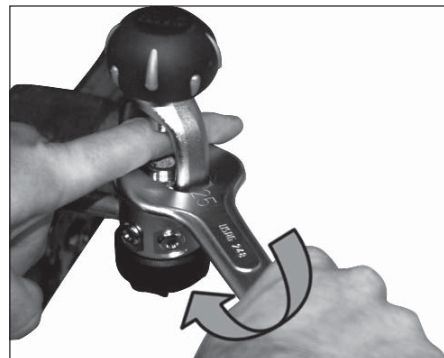


FIG. 7

NOTE TO MAKE DISASSEMBLY EASIER, WE RECOMMEND THAT YOU PLACE THE FIRST STAGE IN A BENCH VISE AS SHOWN IN THE PHOTO (FIG. 7).

NOTE IF USING A TORQUE WRENCH, USE TIGHTENING TORQUE OF APPROXIMATELY 18-20 N/M.

6. Reassemble the seat (27) and the O-rings (17) and (20) on the piston (18) (Fig. 8).
7. Place the piston unit inside the cap (19) (Fig. 9).
8. Position the tool (B-5) inside the first stage body (Fig. 10).



FIG. 8



FIG. 9



FIG. 10

9. Place any shim washers (maximum 2) to adjust the intermediate pressure (27) as follows:
Shim washers: Place the first touching the piston head and the second in the seat of the first stage body (Fig. 9 and Fig. 10).

NOTE FOR CHECKS AND ADJUSTMENTS ON THE FIRST STAGE, CONSULT THE CORRESPONDING SECTION OF THE MAINTENANCE MANUAL: F 7-2

10. Grease the bases of the spring (4) and place it inside the cap (19) (Fig. 11).
11. Screw the cap (19) onto the first stage body (1) and tighten it down fully using the wrench (B-23) (Fig. 12).
12. Position the O-Rings 5 and 13 on the corresponding low (6) and high pressure port caps (14) and/or on the corresponding hoses.
13. Screw the caps and/or hoses into the appropriate seats on the first stage.



FIG. 11



FIG. 12

DIN REASSEMBLY

1. Install the O-Ring (26) on the DIN coupling (24) (Fig. 1).

NOTE TO PREVENT THE DIN FITTING BODY (26) FROM WORKING LOOSE ACCIDENTALLY, APPLY ONE OR TWO DROPS OF THREAD COMPOUND (TYPE LOCTITE 415) ON THE FITTING THREAD ON THE PART FURTHEST FROM THE O-RING.
DO NOT PUT THREAD COMPOUND ON THE O-RING.

2. Position the DIN ring nut (11) on the first stage body (1), and then fully screw down the coupling (24) using the 5-mm Allen wrench (B-4) (Fig. 2).

WARNING!
MARES RECOMMENDS USING A TORQUE WRENCH. SET A TIGHTENING TORQUE OF APPROXIMATELY 18-20 N/M. (FIG. 3)

3. Insert the tapered filter (7) into the DIN connector. (Fig. 4)

4. Position the O-Ring (25) on the OR seat (15).
5. Screw the O-Ring housing (115) to the DIN coupling (24) with a 4-mm Allen wrench and unscrew the disassembly tool (B-5) from the first stage body. (Fig. 5)

NOTE IF USING A TORQUE WRENCH, USE TIGHTENING TORQUE OF APPROXIMATELY 1.5 - 2 N/M.

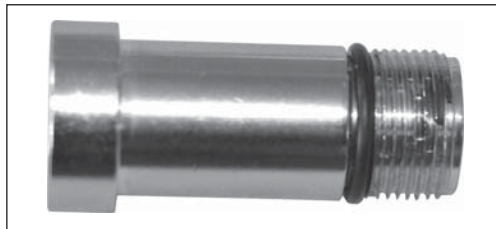


FIG. 1

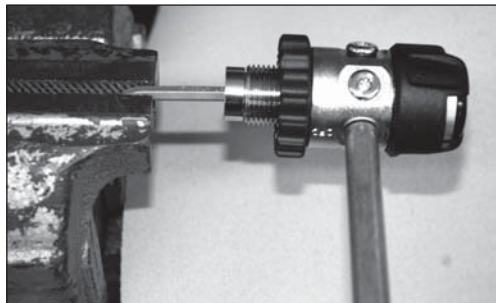


FIG. 2



FIG. 3



FIG. 4



FIG. 5

! WARNING!

Connect the first stage to a full tank (at least 180 bar) or test bench, and open the air valve slowly to expel any foreign matter from the first stage.

! WARNING!

FOR CHECKS AND ADJUSTMENTS ON THE FIRST STAGE, CONSULT THE CORRESPONDING SECTION OF THE MAINTENANCE MANUAL : F 7-1 (2008).

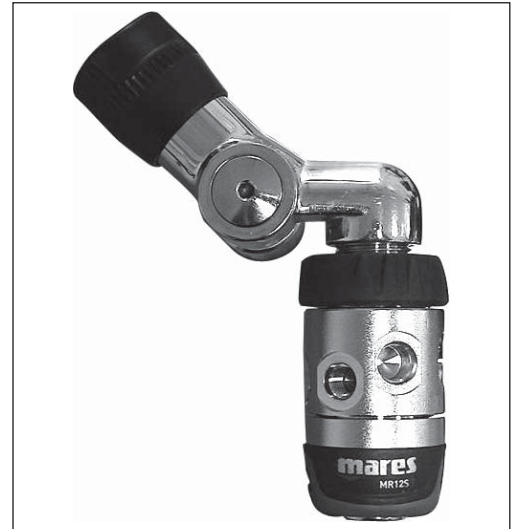


FIG. 6

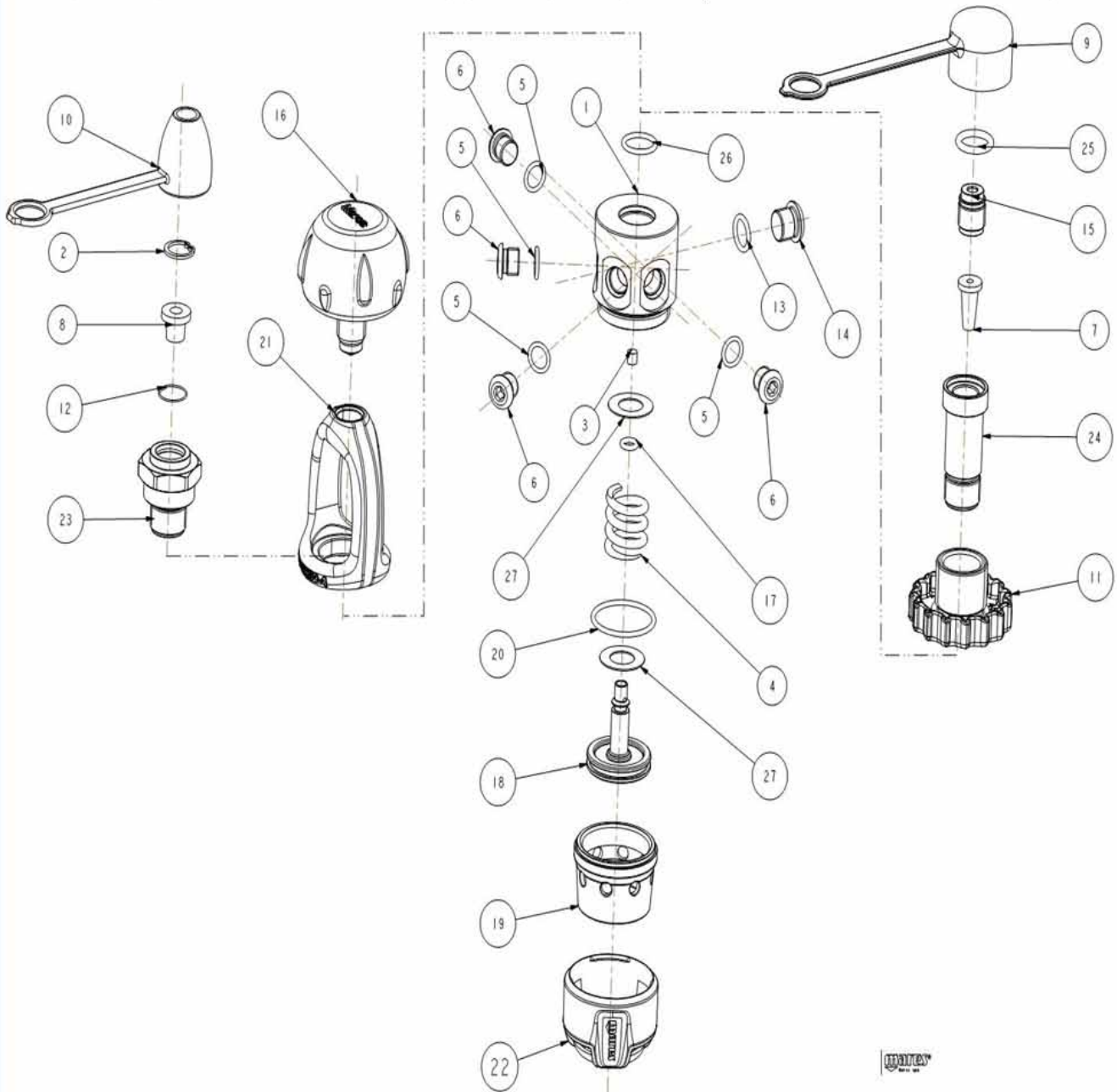


FIG. 7



FIG. 8

| | | |
|----------------------|---------------------------------|--------------------------------|
| Drawing No. E 115 | 1st STAGE R2S | DRAWING UPDATED: 03/01/2011 |
|----------------------|---------------------------------|--------------------------------|



| | | |
|-----------------|---------------------------------|---------------------------------|
| Table No. 38 | 1st STAGE R2S | TABLE UPDATED ON: 28/01/2011 |
|-----------------|---------------------------------|---------------------------------|

| RIF.N. | CODE | DESCRIPTION |
|--------|----------|-----------------------------------|
| 1 | 46201093 | FIRST STAGE BODY |
| 2 | 46185015 | Seeger D.13 |
| 3 | 46186223 | PLASTIC SEAT, PISTON REG. |
| 4 | 46186220 | SPRING POPPET 1ST STAGE |
| 5 | 46110106 | OR 106 |
| 5 | 46110402 | OR 106 Viton |
| 6 | 46185204 | LP PLUG 3/8", 1ST STAGE, REGS. |
| 7 | 46200561 | CONICAL FILTER, DIN |
| 8 | 46186202 | CONICAL FILTER, INT |
| 9 | 46200562 | DUST CAP 300 BAR, DIN |
| 10 | 46185010 | DUST CAP, INT |
| 11 | 46200546 | DIN 300 BAR THREADED LOCKING RING |
| 12 | 46185013 | SPRING, FILTER 1ST |
| 13 | 46110108 | OR 108 |
| 13 | 46110404 | OR 108 Viton |
| 14 | 46185205 | HP PLUG 7/16", 1ST STAGE |
| 15 | 46200547 | O-RING SEAT DIN |
| 16 | 46184079 | YOKE KNOB |
| 17 | 46110203 | OR 2018 |
| 17 | 46110409 | OR 2018 Viton |

| RIF.N. | CODE | DESCRIPTION |
|--------|----------|---------------------------------|
| 18 | 46201095 | PISTON 1st STAGE |
| 19 | 46201097 | CAP 1ST STAGE |
| 20 | 46110224 | OR 2100 |
| 20 | 46110419 | OR 2100 Viton |
| 21 | 46201074 | YOKE 2k9 |
| 22 | 46201098 | COVER R2S |
| 23 | 46201100 | NUT,YOKE RETAINER 1ST STAGE R2S |
| 24 | 46201102 | BODY, DIN CONNECTOR 300 BAR |
| 25 | 46110247 | OR 3043 |
| 26 | 46110211 | OR 2050 |
| 26 | 46110413 | OR 2050 Viton |
| 27 | 46186221 | PLASTIC RING, SPRING BASE |

| ASSEMBLED | | |
|-----------|----------|--|
| F | 416809 | DIN CONNECTOR 300 BAR, R2S (7-9-11-15-24-25-26) |
| * * * | 46201108 | SERVICE KIT, R2S 1ST STAGE INT/DIN (2-3-5-7-8-13-17-20-25-26-88) |
| * * * | 46201130 | SERVICE KIT 1ST STAGE INT/DIN (VITON) (2-3-5-7-8-13-17-20-25-26-88) |

**SUBJECT:
OCTOPUS MV COVER**

BTM20

HAVING RECEIVED A NUMBER OF REPORTS, MARES SPA TECHNICAL SUPPORT REQUESTS THAT ALL MARES LAB PARTNERS, WHEN CARRYING OUT PERIODIC INSPECTIONS, CHECK FOR THE PRESENCE OF SMALL HOLES IN THE OVAL MEMBRANE OF THE SECOND STAGE (**CODE: 46187009**) AROUND THE METAL DISK (PHOTO 1). IF ANY HOLES ARE DISCOVERED THE OVAL MEMBRANE MUST BE REPLACED AND YOU MUST CHECK THE SURFACE OF THE PURGE BUTTON POPPET (**CODE: 46187028**) (PHOTO 2) TO CHECK FOR ANY RESIDUAL MATERIAL (PHOTO 3); IF SO REMOVE (PHOTO 4) USING A CUTTER FOR EXAMPLE, IN ORDER TO AVOID THE PROBLEM RETURNING WHEN REPLACING THE MEMBRANE.

MARES SPA ALSO RECOMMENDS CHECKING ANY STOCK OF MV COVERS KEPT AS SPARE PARTS AND THEN REMOVE THE PLASTIC RIDGE IF NEEDED.

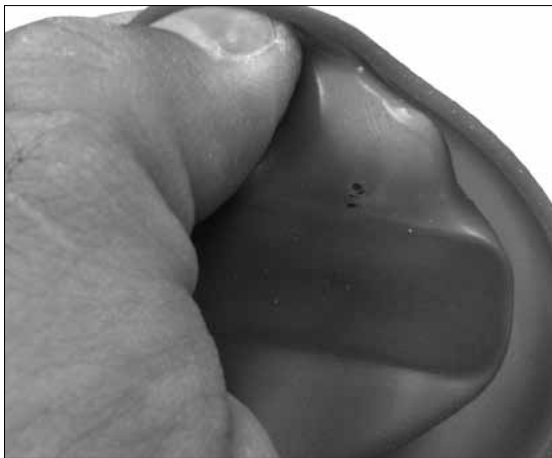


PHOTO 1



PHOTO 2

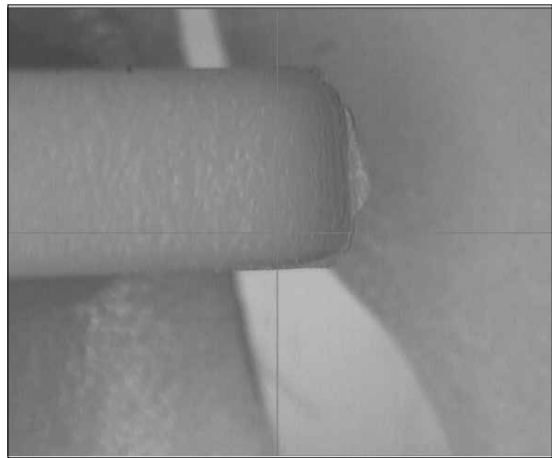


PHOTO 3

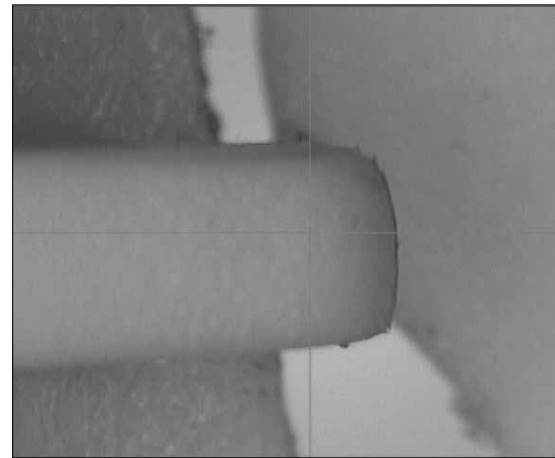


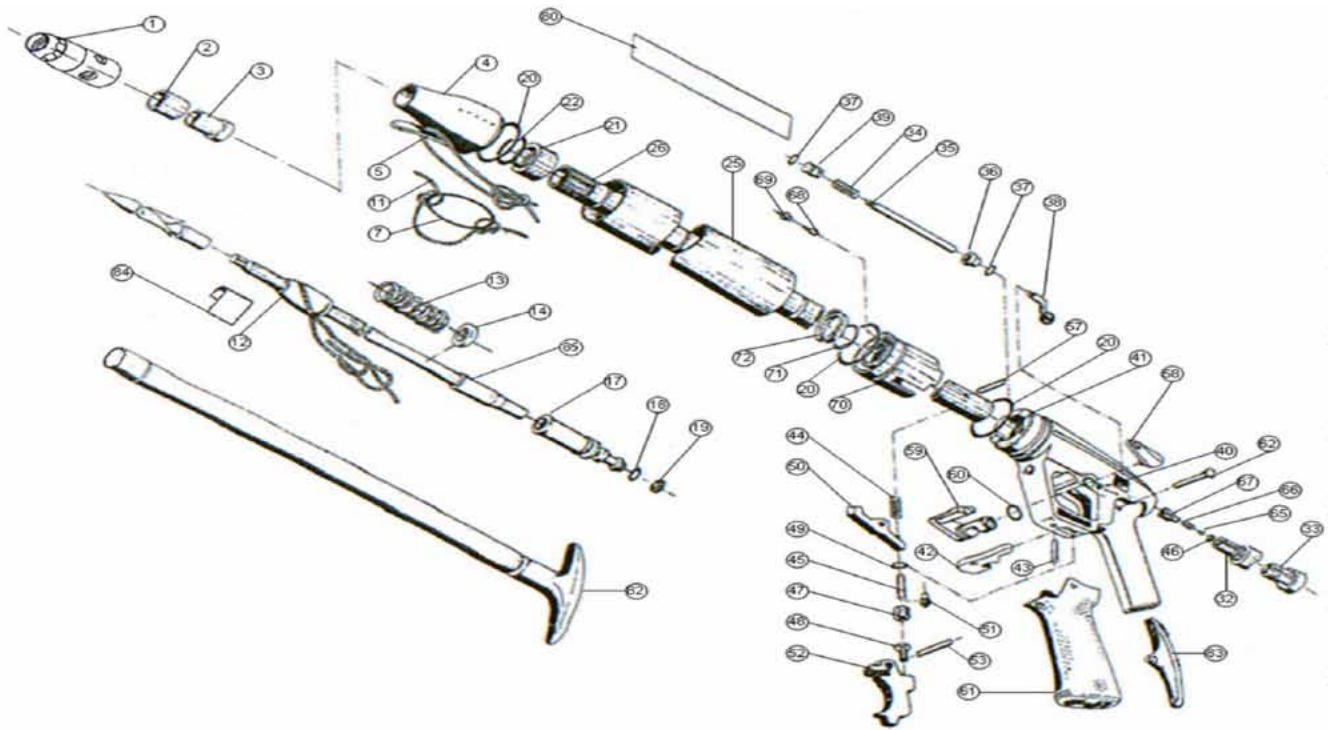
PHOTO 4

ATTENTION!

THE OPERATIONS DESCRIBED MUST BE CARRIED OUT BY QUALIFIED PERSONNEL AT A TECHNICAL SUPPORT CENTRE AND/OR AUTHORISED MARES LAB DISTRIBUTOR.

IN THE ABSENCE OF AN UP-TO-DATE MAINTENANCE MANUAL, PLEASE CONTACT MARES TECHNICAL SUPPORT BEFORE CARRYING OUT ANY MAINTENANCE AND/OR REPAIR, ADJUSTMENT AND INSPECTION.

| | | |
|----------------------|-------------------------|--------------------------------|
| Drawing No: F 258 | STEN 11 SPEARGUN | DRAWING UPDATED: 10/02/2011 |
|----------------------|-------------------------|--------------------------------|

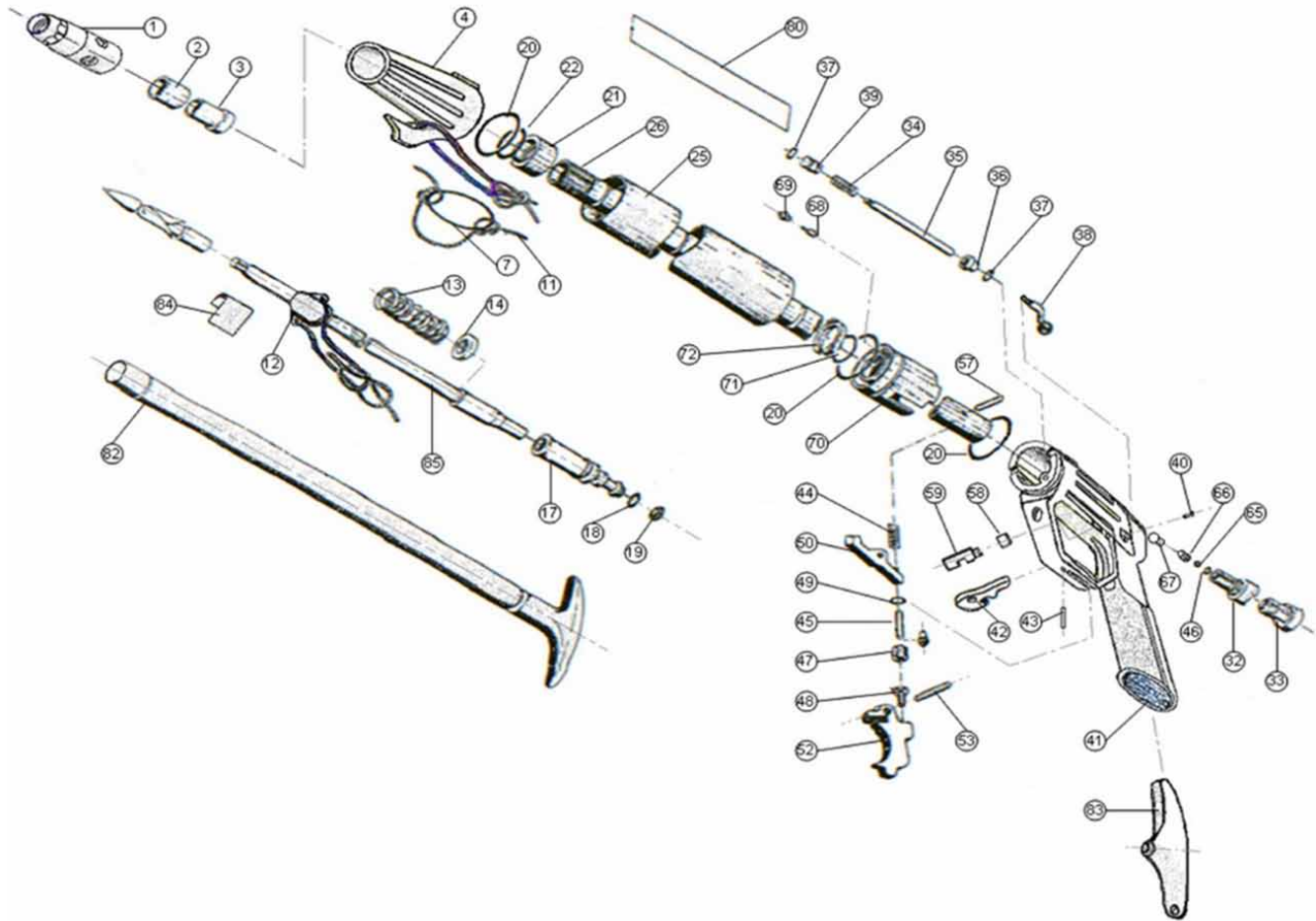


| | | |
|------------------|-------------------------|---------------------------------|
| Table No: 513 | STEN 11 SPEARGUN | TABLE UPDATED ON: 10/02/2011 |
|------------------|-------------------------|---------------------------------|

| RIF.N. | CODICE | DENOMINAZIONE |
|--------|----------|------------------------|
| 1 | A | |
| 2 | 43200440 | SHOCK ABSORBER, |
| 3 | 43200438 | SHOCK ABSORBER INSERT |
| 4 | 43201055 | NOSE CONE K11 |
| 5 | A | |
| 6 | 43164008 | PROTECTIVE CAP HEAD |
| 7 | 43163968 | RUBBER O-RING |
| 11 | 43169821 | SHOCK LINE, 3 MTS |
| 11 | 43169818 | SHOCK LINE, 5 MTS |
| 12 | 43164004 | LINE RETAINER |
| 14 | 43163503 | WASHER DIA 7.2, |
| 17 | N | |
| 18 | 46110107 | OR 2031 |
| 19 | N | |
| 20 | 46110208 | OR SH 75 F SPECIAL |
| 21 | 43164204 | BUSHING |
| 22 | 46110228 | OR 3062 |
| 25 | 43200070 | TANK K11 58cm |
| 25 | 43200071 | TANK K11 70cm |
| 25 | 43200072 | TANK K11 84cm |
| 25 | 43200073 | TANK K11 100cm |
| 25 | 43164011 | TANK K11 110cm |
| 26 | 43164215 | BARREL STEALTH 550 |
| 26 | 43164216 | BARREL STEALTH 700 |
| 26 | 43164217 | BARREL STEALTH 850 |
| 26 | 43164218 | BARREL STEALTH 970 |
| 26 | 43164219 | BARREL STEALTH 1100 |
| 32 | M | |
| 33 | 43163563 | WHITE CAP INLET VALVE |
| 34 | L | |
| 35 | L | |
| 36 | L | |
| 37 | 46110102 | OR 2015 |
| 38 | L | |
| 39 | L | |
| 41 | H | |
| 42 | 43163668 | LINE RELEASE, SPEARGUN |

| RIF.N. | CODICE | DENOMINAZIONE |
|-----------------|----------|---|
| 43 | 43163614 | PIN, LINE RELEASE, SPEARGUN |
| 44 | 43163313 | SPRING CATCH HOOK |
| 45 | 43164282 | CONNECTING PLUNGER 1,5 |
| 46 | 46110201 | OR R/1 |
| 47 | 43164284 | HOUSING CONNECTING PLUNGER |
| 48 | E | |
| 49 | 46110242 | O-RING 2-003 |
| 50 | 43163377 | CATCH HOOK, SPEARGUN |
| 51 | 43164286 | SPACING SLEEVE APNEA SYSTEM |
| 52 | E | |
| 53 | 43163337 | PIN 4 X 23 |
| 57 | 43163338 | PIN 4 X 20 |
| 58 | 43163539 | SAFETY STOP |
| 59 | 43163538 | SAFETY BODY |
| 60 | 46110106 | OR 106 |
| 61 | 43163540 | HANDLE COVER |
| 62 | 43164233 | PIN HANDLE |
| 65 | 43163808 | BALL BEARING INLET VALVE |
| 66 | 43163807 | SPRING, INLET VALVE SPEARGUN |
| 67 | 43164220 | BUSHING INLET VALVE |
| 68 | 43163635 | SEAT, ONE-WAY VALVE, SPEARGUN |
| 69 | 43163636 | HOUSING, ONE-WAY VALVE, SPEARGUNN |
| 70 | D | |
| 71 | 46110227 | OR 3056 |
| 72 | 43164212 | CLIP 16 POWER REGULATOR |
| COMPLETI | | |
| 82 | 423901 | AIR PUMP, SCREW CONNECTION |
| A | 43201050 | KIT HEAD d11 (1-2-3) |
| D | 43164214 | POWER REGULATOR ASSEMBLY(68-69-70) |
| E | 43164230 | TRIGGER ASS.Y SPARK (48-52) |
| H | 43200354 | HANDLE ASSY W/REG. STEALTH SPRGN (38-41-42-43-46-47-61- L) |
| L | 43163937 | POWER ADJUSTMENT ASSY (34-35-36-37-39) |
| M | 43164222 | INLET VALVE ASSY (32-46-65-66-67) |
| N | 43164211 | PISTON ASSY (17-18-19) |
| *** | 43164290 | COMPLETE SET OF O-RINGS (18-19-20-22-37-46-49-60-71) |

| | | |
|----------------------|---------------------|--------------------------------|
| Drawing No: F 207 | JET SPEARGUN | DRAWING UPDATED: 01/06/2001 |
|----------------------|---------------------|--------------------------------|



| | | |
|------------------|---------------------|---------------------------------|
| Table No: 505 | JET SPEARGUN | TABLE UPDATED ON: 15/01/2004 |
|------------------|---------------------|---------------------------------|

| RIF.N. | CODICE | DENOMINAZIONE |
|--------|----------|-----------------------------------|
| 1 | A | |
| 2 | 43163856 | SHOCK ABSORBER 13 |
| 3 | 43200413 | SHOCK ABSORBER INSERT, 13 |
| 4 | 43200419 | NOSE CONE JET |
| 5 | 43164102 | HEAD FERRULE |
| 6 | 43164138 | PROTECTIVE CAP HEAD Blue |
| 7 | 43163968 | RUBBER O-RING |
| 11 | 43169821 | SHOCK LINE, 3 MTS |
| 11 | 43169818 | SHOCK LINE, 5 MTS |
| 12 | 43163355 | LINE RETAINER, 8.5 MM SPEARGUN |
| 13 | 43163354 | SHAFT SPRING, 8.5 MM I.D.SPEARGUN |
| 14 | 43163505 | SHAFT WASHER, 8.2 MM D |
| 17 | N | |
| 18 | 46110110 | OR 2037 |
| 19 | N | |
| 20 | 46110208 | OR SH 75 F SPECIAL |
| 21 | 43163665 | BUSHING SPEARGUN |
| 22 | 46110206 | OR 122 BIS |
| 25 | 43200414 | TANK JET 42 bk |
| 25 | 43200415 | TANK JET 58 bk |
| 25 | 43200416 | TANK JET 70 bk |
| 26 | 43163362 | BARREL JET 42 |
| 26 | 43163361 | BARREL JET 58 |
| 26 | 43163639 | BARREL JET 70 |
| 32 | M | |
| 33 | 43200421 | CAP INLET VALVE ORANGE |
| 34 | L | |
| 35 | L | |
| 36 | L | |
| 37 | 46110102 | OR 2015 |
| 38 | 43164234 | SLIDER ASSY |
| 39 | L | |
| 41 | H | |
| 41 | G | |
| 42 | 43163613 | LINE RELEASE BLACK |
| 43 | 43163614 | PIN, LINE RELEASE, SPEARGUN |

| RIF.N. | CODICE | DENOMINAZIONE |
|--------|----------|----------------------------------|
| 44 | 43163313 | SPRING CATCH HOOK |
| 45 | 43163344 | CONNECTING PLUNGER |
| 46 | 46110201 | OR R/1 |
| 47 | 43164024 | HOUSING CONNECTING PLUNGER |
| 48 | E | |
| 49 | 43164150 | SAFETY CATCH, ORANGE |
| 50 | 43163377 | CATCH HOOK, SPEARGUN |
| 52 | E | |
| 53 | 43163337 | PIN 4 X 23 |
| 54 | P | |
| 55 | P | |
| 56 | P | |
| 65 | M | |
| 66 | M | |
| 67 | M | |
| 68 | 43163635 | SEAT, ONE-WAY VALVE, SPEARGUN |
| 69 | 43163636 | HOUSING, ONE-WAY VALVE, SPEARGUN |
| 70 | D | |
| 71 | 46110220 | OR 2062 |
| 72 | 43163518 | CIRCLIP, POWER REGULATOR |

| COMPLETI | | |
|-----------------|----------|---|
| A | 43201054 | KIT HEAD d13 (1-2-3) |
| D | 43163638 | POWER REGULATOR ASSEMBLY (68-69-70) |
| E | 43163612 | TRIGGER ASSEMBLY (48-52) |
| G | 43164153 | HANDLE ASS,Y W/O POWER ADJUSTMENT BL. (41-42-43-46-47-49) |
| H | 43164155 | HANDLE ASSY.W/POWER ADJUST STEN BLUE (L- 38-41-42-43-46-47-49) |
| L | 43163937 | POWER ADJUSTMENT ROD, SPGN (34-35-36-37-39) |
| M | 43163941 | INLET VALVE ASSEMBLY (32-46-65-66-67) |
| N | 43163629 | PISTON ASSEMBLY (17-18-19) |
| P | 43163683 | LEG SHEATH ASSEMBLY JET 42 |
| * * * | 43163979 | COMPLETE SET OF O-RINGS (18-19-20-22-37-46-71) |

► **SPEARGUN TROUBLESHOOTING**

| PROBLEM | MODEL | PROBABLE CAUSE | SOLUTION |
|---|---|--|--|
| - 1 - AIR LEAK FROM THE MUZZLE | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Piston O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 2) Piston cap dirty, defective or damaged | 1) Replace the piston cap |
| | | 3) Barrel scratched or damaged | 1) Replace the barrel |
| - 2 - AIR LEAK FROM THE POWER REGULATOR | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Power control rod O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 2) Power control rod scratched or damaged | 1) Replace the power control rod |
| | | 3) O-Ring seat in handle dirty, defective or damaged | 1) Clean or replace the handle |
| - 3 - AIR LEAK FROM RECHARGE VALVE | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Foreign particles in recharge valve body | 1) Clean the recharge valve body |
| | | 2) Recharge valve O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 3) Recharge valve ball defective or damaged | 1) Replace the ball |
| | | 4) O-Ring seat in recharge valve dirty, defective or damaged | 1) Clean or replace the valve body |
| - 4 - AIR LEAK FROM TRIGGER | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Connecting piston O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 2) Connecting piston scratched or damaged | 1) Replace the connecting piston |
| | | 3) O-Ring seat in handle dirty, defective or damaged | 1) Clean or replace the handle |
| - 5 - AIR LEAK BETWEEN TANK AND WISHBONE | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 2) Tank damaged | 1) Replace the tank |
| | | 3) Wishbone O-Ring seat defective or damaged | 1) Replace the wishbone |
| - 6 - AIR LEAK BETWEEN THE TANK AND HANDLE | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) O-Ring dirty, defective or damaged | 1) Replace the O-Ring |
| | | 2) Tank damaged | 1) Replace the tank |
| | | 3) O-Ring seat in handle defective or damaged | 1) Replace the handle |
| 7 - INSUFFICIENT POWER | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Power regulator on "reduced pressure" setting | 1) Change to "full power" setting |
| | | 2) Speargun pressure low | 1) Inspect for leaks and repair and/or load the speargun |
| - 8 - SHAFT ACCIDENTALLY DISCHARGED WITHOUT PRESSING TRIGGER | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Trigger sensitivity too high | 1) Correctly adjust trigger sensitivity |

► SPEARGUN TROUBLESHOOTING

| PROBLEM | MODEL | PROBABLE CAUSE | SOLUTION |
|---|---|---|---|
| - 9 - SHAFT NOT DISCHARGED WHEN TRIGGER IS PRESSED | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Trigger sensitivity low | 1) Correctly adjust trigger sensitivity |
| - 10 - PRESSING TRIGGER WITH SAFETY CATCH ENGAGED RELEASES THE PISTON | CYRANO SPARK STEN STEN 2001 STEN 11 | 1) Safety catch damaged or defective | 1) Replace the safety catch |
| | | 2) Trigger damaged or defective | 1) Replace the trigger |
| - 11 - DIFFICULTY LOADING THE SPEARGUN | CYRANO SPARK STEN 2001 STEN 11 | 1) Speargun excessively pressurized | 1) Discharge the speargun re-pressurize correctly |
| | | 2) Piston damaged or defective | 1) Replace the piston |
| | | 3) Shock absorber bushing damaged or defective | 1) Replace the shock absorber bushing |
| | | 4) Spear shaft damaged or bent | 1) Replace the spear shaft |
| - 12 - SPEAR SHAFT DOES NOT REMAIN INSIDE THE PISTON | CYRANO SPARK STEN 2001 STEN 11 | 1) Spear shaft housing in piston damaged or defective | 1) Replace the piston |
| | | 2) Spear shaft tailpiece damaged or defective | 1) Replace the shaft tailpiece |
| | | 3) Non-original spear shaft | 1) Replace with an original spear shaft |

**RE:
ABYSS 08 SECOND STAGE COVER****ITM19 BIS**

MARES TECHNICAL SUPPORT SERVICE IS PLEASED TO ANNOUNCE TO ITS MARES LAB SUPPORT CENTERS THAT AN IMPROVEMENT HAS BEEN MADE TO THE ABYSS SECOND STAGE COVER. THE CODES ASSOCIATED WITH THIS CHANGE ARE: 46200849-46200850-46200851. THE IMPROVEMENT CONCERNS THE SYSTEM FOR FASTENING THE METAL PLATE (MESH GRID) TO THE COVER. THIS NEW SOLUTION PREVENTS THE FRONT SECTION OF THE COVER FROM COMING OUT AFTER A STRONG BLOW (ESPECIALLY ON THE SURFACE).

THE NEW COVERS CAN BE IDENTIFIED BY THE TWO HOOKS INSIDE THE COVER, WHICH CAN BE SEEN IN THE PHOTO ON PAGE 2.

IN ADDITION, ABYSS SECOND STAGES THAT HAVE THE NEW COVER ASSEMBLED CAN BE IDENTIFIED BY THE PROGRESSIVE PRODUCT SERIAL NUMBER, STARTING WITH THE NUMBER SHOWN IN TABLE #1.

TABLE #1

| PRODUCT CODE | DESCRIPTION | SERIAL NUMBER |
|---------------------|---------------------------|----------------------|
| 416134 | ABYSS REG. 22 INT - DIN | EA 13751 |
| 416133 | ABYSS REG. 42 INT - DIN | BM 13849 |
| 416504 | ABYSS REG. OCTOPUS | OY 11571 |
| 416134 | ABYSS REG. 22 NITROX | ALL PRODUCTIONS |
| 416504 | ABYSS REG. NITROX OCTOPUS | ALL PRODUCTIONS |

WARNING

REPLACEMENT AND TESTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AT A TECHNICAL SUPPORT CENTER AND/OR AUTHORIZED MARES LAB DISTRIBUTOR.

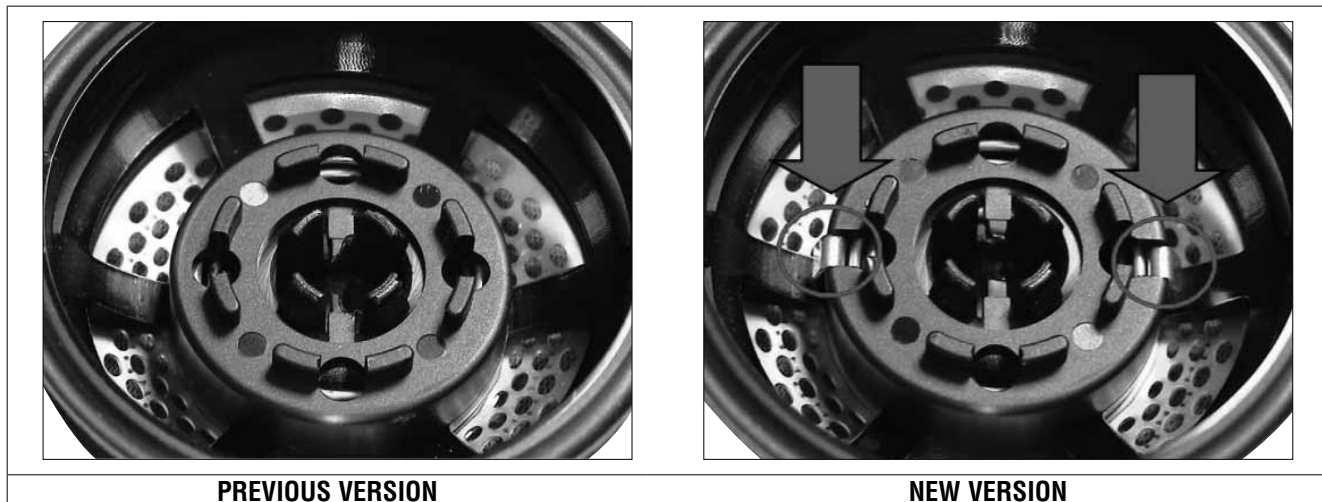
FOR DISASSEMBLY, REASSEMBLY, ADJUSTMENT, AND TESTING, YOU MUST CONSULT THE APPROPRIATE MAINTENANCE MANUAL.

IF THE UPDATED MANUAL IS UNAVAILABLE, PLEASE CONTACT MARES BEFORE PERFORMING ANY MAINTENANCE, ADJUSTMENT, OR TESTING PROCEDURE.



PREVIOUS VERSION

NEW VERSION



PREVIOUS VERSION

NEW VERSION

RE:
IDENTIFICATION OF MOBBY'S BY MARES VALVE REPLACEMENT PARTS

ITM20

DUE TO SOME CONFUSION CONCERNING REPLACEMENT PARTS FOR MOBBY'S BY MARES DRY SUIT INFLATION AND DEFLATION VALVES, WE HEREBY NOTIFY YOU THAT WHEN IT BECOMES NECESSARY TO REPLACE THE VALVES ON POLARFIT (412012), ICEFIT (412016-412018), ICEFIT SHE DIVES (412019-412014), AND DRYFIT (412014-412015), THE ORIGINALLY INSTALLED VALVE TYPE MUST BE USED, BECAUSE THE TWO VARIATIONS, SHOWN BELOW, ARE NOT INTERCHANGEABLE, AND THEREFORE THE PREVIOUS SITECH VERSION CANNOT BE REPLACED WITH THE MOBBY'S PALMFIT VERSION AND VICE VERSA.

BELOW YOU CAN CHECK THE TWO VERSIONS AND THEIR CORRESPONDING REPLACEMENT PART CODES, WHICH REFER TO COMPLETE, TESTED VALVES.

SITECH VERSION



42150062

42150061

PALMFIT VERSION



42200054

42200053

WARNING

REPLACEMENT AND TESTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AT A TECHNICAL SUPPORT CENTER AND/OR AUTHORIZED MARES LAB DISTRIBUTOR.

RE:
UPDATE AIR-CONTROL INFLATION SPRING

ITM21

MARES S.P.A TECHNICAL SUPPORT ANNOUNCES THAT A NEW SPRING WILL BE ASSEMBLED FOR THE INFLATION BUTTON ON AIR-CONTROL (**CODE 416893**) THAT HAS SLIGHTLY GREATER THRUST THAN THE PREVIOUS SPRING AND ENSURES PERFECT OPERATIONS EVEN IN EXTREME CONDITIONS (DIRTY OR CONTAMINATED WATER).
THE NEW INFLATION BUTTON SPRING WILL BE ASSEMBLED BEGINNING FROM SERIAL NUMBER: **EC13569**.
THE CODE OF THE NEW VERSION IS #46201113. THE NEW SPRING CAN BE IDENTIFIED BY MEASURING THE DIAMETER OF THE SPIRAL, WHICH IS 0.9~MM (FIG. 1 AND FIG. 2).

PREVIOUS VERSION
COD. 47200744

CURRENT VERSION
COD. 46201113



FIG. 1

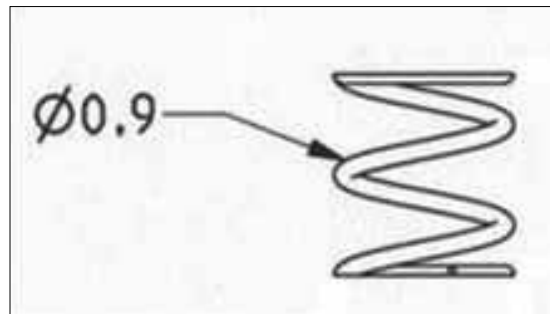


FIG. 2

WARNING

REPLACEMENT FOR UPDATE PURPOSES AND CORRESPONDING TESTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AT A TECHNICAL SUPPORT CENTER AND/OR AUTHORIZED MARES LAB DISTRIBUTOR.
IF YOU DO NOT HAVE AN UP-TO-DATE MAINTENANCE MANUAL, PLEASE CONTACT MARES TECHNICAL SUPPORT BEFORE PERFORMING ANY MAINTENANCE AND/OR REPAIR, ADJUSTMENT, OR TESTING OPERATION.

RE:
UPDATE AIR-CONTROL DEFLATOR BUTTON

ITM22

MARES S.P.A. TECHNICAL SUPPORT ANNOUNCES THAT A NEW DEFLATOR BUTTON (GREY) WITH A MODIFIED SHAPE (SEE FIG. 1) WILL BE ASSEMBLED ON AIR-CONTROL (CODE 416893) THAT WILL IMPROVE BOTH PERFORMANCE AND RELIABILITY, EVEN AFTER EXTENDED USE.

THE NEW DEFLATOR BUTTON WILL BE ASSEMBLED STANDARD BEGINNING WITH SERIAL NUMBER: **EC 10749**.

THE COMPONENT CODE REMAINS UNCHANGED (**#46201019**); IN ANY EVENT THE NEW VERSION CAN BE RECOGNIZED BECAUSE OF ITS DIFFERENT SHAPE, AS SHOWN IN FIG. 1.

PREVIOUS VERSION



CURRENT VERSION



FIG. 1

WARNING

REPLACEMENT TO UPDATE THE BUTTON AND THE CORRESPONDING TESTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AT A TECHNICAL SUPPORT CENTER AND/OR AUTHORIZED MARES LAB DISTRIBUTOR. IF YOU DO NOT HAVE AN UP-TO-DATE MAINTENANCE MANUAL, PLEASE CONTACT MARES TECHNICAL SUPPORT BEFORE PERFORMING ANY MAINTENANCE AND/OR REPAIR, ADJUSTMENT, OR TESTING OPERATION.